REMARKS

The Office Action mailed November 9, 2006, has been received and reviewed. Claims 1, 3-6, 8-10, 20, 22-25 and 27-29 are currently pending in the application. Claims 1, 3-6, 8-10, 20, 22-25 and 27-29 stand rejected. Applicants have amended claims 1, 6, 20 and 25, and respectfully request reconsideration of the application as amended herein.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 5,060,266 to Dent in view of U.S. Patent No. 6,912,228 to Dahlman et al.

Claims 1, 3, 6, 8, 20, 22, 25, and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dent (U.S. Patent No. 5,060,266) in view of Dahlman et al. (U.S. Patent No. 6,912,228). Applicants respectfully traverse this rejection, as hereinafter set forth.

> M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:
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> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claims 1, 3, 6, 8, 20, 22, 25, and 27 are improper because the elements for a prima facie case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Claims 1, 3 and 20, 22

Regarding amended independent claim 1 and claim 3 depending therefrom and amended independent claim 20 and claim 22 depending therefrom, Applicants' independent claims 1 and 20, as presently amended, include claim limitations not taught or suggested in the cited references.

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Applicants' independent claim 1, as presently amended, recites:

1. A method for scrambling information bits in a communications system, comprising:
determining a scrambling sequence in accordance with a metric of system time, wherein said determining a scrambling sequence includes *determining the metric based on a subinterval of a system time interval of a channel in which the information bits are to be transmitted*; and
scrambling information bits with the determined scrambling sequence in accordance with the metric. (Emphasis added).

Applicants' independent claim 20, as presently amended, recites:

20. An apparatus for scrambling information bits in a communications system, the apparatus comprising:
means for *determining a scrambling sequence in accordance with a metric* of system time, wherein said determining a scrambling sequence includes *determining the metric based on a subinterval of a system time interval of a channel in which the information bits are to be transmitted*; and
means for scrambling information bits with the determined scrambling sequence in accordance with the metric. (Emphasis added.)

The Office Action alleges:

As per claim 1,
Dent discloses: determining a scrambling sequence in accordance with time (i.e. time corresponding to a slot) [Fig. 4, 6, 7, time clock or block counter controls the operation of the time-of-day or block-count driven ciphering/deciphering device, including a synchronization mechanism, col. 12 lines 47-50, col. 11 lines 10-28]; determining the time in accordance with a subinterval of a system time interval (i.e. time slot) in which the information bits are to be transmitted [Fig. 6, 7, col. [12] 59-62, col. 13 lines 2-4]; **and determining the scrambling sequence in accordance with the time (corresponding to a slot) [Fig. 4-7, col. 12 lines 60-68, col. 13 lines 1-4].**
Dahlman teaches: metric of system time [Fig. 10 → one time period includes ten time slots, col. 8 lines 24-28]. (Office Action, pp. 2-3; emphasis added).

As per claim 20, it encompasses limitations that are similar to limitations of claim 1. Thus, it is rejected with the same rationale applied against claim 1 above. (Office Action, p. 4).

Applicants respectfully assert that neither the Dent reference nor the Dahlman reference, either individually or in any proper combination, teach or suggest Applicants' invention as presently claimed in independent claims 1 and 20.

Generally, the Dent reference teaches or suggests an incrementing *synchronized counter on both the transmitting side and the receiving side* that "combines or mixes the secret key 211

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with the count 213 and generates a plurality of pseudo-random keystream bits at a serial or parallel output 209." (Dent, col. 11, lines 19-22; emphasis added). Specifically, the Dent reference teaches or suggests:

> In the receiver portion, *a time clock or block counter* 204, which is identical in construction to the time clock or block counter 201 and is provided with an increment 216 identical to the increment 215, supplies a count 214 …. (Dent, col. 11, lines 29-32; emphasis added).
>
> The ciphering unit 220 also provides a *current time-of-day or block count, e.g., the count 213*, to an auxiliary, low rate channel encoder 221. (Dent, col. 12, lines 62-65; emphasis added).
>
> … *proper deciphering of the encrypted data will occur only if the time clocks or block counters 201, 204 are perfectly synchronized with one another*. An appropriate *synchronization mechanism 217 must be provided for this purpose*. (Dent, col. 11, lines 49-53; emphasis added).

While the Dent reference teaches or suggests a "time clock", "block counter", "current time-of-day", or "block count" to systematically generate an "increment" to both the transmitter and the receiver with is kept in synchronization by "an appropriate synchronization mechanism", the Dent reference does not teach or suggest Applicants' claimed element of *"determining a scrambling sequence in accordance with a metric* of system time, wherein said determining a scrambling sequence includes *determining the metric based on a subinterval of **a system time interval of a channel in which the information bits are to be transmitted***".

Even assuming, for the sake of argument, that the Dent reference's "time clock", "block counter", "current time-of-day", or "block count" arguably teaches or suggests Applicants' claim element of "a metric of system time". Such a "metric of system time" as taught or suggested by the Dent reference merely enables an increment of the Dent counter and does **not** identify *"a subinterval … of a channel in which the information bits are to be transmitted"* as claimed by Applicants in amended independent claims 1 and 20 from which claims 3 and 22 respectively depend.

The Office Action cites the Dahlman reference for teaching or suggesting that one time period may be comprised of a plurality of time slots. (Office Action pp. 2-3).

Therefore, since neither the Dent reference nor the Dahlman reference teach or suggest Applicants' claimed invention including *"determining a scrambling sequence in accordance with a metric* of system time, wherein said determining a scrambling sequence includes *determining the metric based on a subinterval of **a system time interval of a channel in which***

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the information bits are to be transmitted", these references, either individually or in any proper combination, cannot render obvious, under 35 U.S.C. §103, Applicants' invention as presently claimed in amended independent claim 1 and claim 3 depending therfrom and amended independent claim 20 and claim 22 depending therefrom. Accordingly, Applicants respectfully request the rejections be withdrawn.

Claims 6, 8 and 25, 27

Regarding amended independent claim 6 and claim 8 depending therefrom and amended independent claim 25 and claim 27 depending therefrom, Applicants' independent claims 6 and 25, as presently amended, includes claim limitations not taught or suggested in the cited references.

Applicants' independent claim 6, as presently amended, recites:

6. A method for unscrambling information bits in a communications system, comprising:
determining an unscrambling sequence in accordance with a metric of system time, wherein said determining an unscrambling sequence includes *determining the metric based on a first subinterval of a system time interval of a channel preceding a second subinterval of the system time interval by a pre-determined number of subintervals*, the second subinterval including information bits to be unscrambled; and
unscrambling information bits with the determined unscrambling sequence in accordance with the metric. (Emphasis added.)

Applicants' independent claim 25, as presently amended, recites:

25. An apparatus for unscrambling information bits in a communications system, the apparatus comprising:
means for determining an unscrambling sequence in accordance with a metric of system time, wherein said determining an unscrambling sequence includes *determining the metric based on a first subinterval of a system time interval of a channel preceding a second subinterval of the system time interval by a pre-determined number of subintervals,* the second subinterval including information bits to be unscrambled; and
means for unscrambling information bits with the determined unscrambling sequence in accordance with the metric. (Emphasis added.)

The Office Action alleges:

As per claim 6, ...
    Dent discloses: determining an unscrambling sequence in accordance with time (i.e. time corresponding to a slot) [Fig. 4, 6, 7, time clock or block counter controls the operation of the time-of-day or block-count driven ciphering/deciphering

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device, including a synchronization mechanism, col. 12 lines 47-50, col. 13 lines 15-40]; determining the time in accordance with a first subinterval of a system time interval (i.e. Fig. 7, time slot →S1 or S2 or S3 or S4) preceding a second subinterval of the system time interval by a pre-determined number of subintervals (i.e. Fig. 7, time slot → M5 or M21 or M37 …. etc.), wherein the second subinterval (i.e. message bits) comprises information bits to be unscrambled [Fig. 4-7, col. 12 lines 60-63, col. 13 lines 21-24]; and **determining the unscrambling sequence in accordance with the time (corresponding to a slot) [Fig. 4-7, col. 13 lines 15-40].**
Dahlman teaches: method of system time [Fig. 10 → one time period includes ten time slots, col. 8 lines 24-28]. (Office Action, pp. 3-4; emphasis added).

As per claim 25, it encompasses limitations that are similar to limitations of claim 6. Thus, it is rejected with the same rationale applied against claim 6 above. (Office Action, p. 5).

Applicants herein sustain the above-proffered arguments regarding the lack of teaching or suggestion in any of the cited references of "*determining the metric based on a first subinterval of a system time interval of a channel preceding a second subinterval of the system time interval by a pre-determined number of subintervals*" as claimed by Applicants. Applicants herein further reassert that the Dent reference's "time clock", "block counter", "current time-of-day", or "block count" to systematically generate an "increment" does not teach or suggest Applicants' claimed element of "*determining the metric based on a first subinterval of a system time interval of a channel preceding a second subinterval of the system time interval by a pre-determined number of subintervals*".

Again, the Office Action cites the Dahlman reference for teaching or suggesting that one time period may be comprised of a plurality of time slots. (Office Action p. 4).

Therefore, since neither the Dent reference nor the Dahlman reference teach or suggest Applicants' claimed invention including "*determining the metric based on a first subinterval of a system time interval of a channel preceding a second subinterval of the system time interval by a pre-determined number of subintervals*", these references, either individually or in any proper combination, cannot render obvious, under 35 U.S.C. §103, Applicants' invention as presently claimed in amended independent claim 6 and claim 8 depending therefrom and amended independent claim 25 and claim 27 depending therefrom. Accordingly, Applicants respectfully request the rejections be withdrawn.

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Obviousness Rejection Based on U.S. Patent No. 5,060,266 to Dent in view of U.S. Patent No. 6,912,228 to Dahlman et al. and further in view of U.S. Patent No. 5,321,754 to Fisher et al.

Claims 4, 9, 10 and 23, 28, 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dent (U.S. Patent No. 5,060,266) in view of Dahlman et al. (U.S. Patent No. 6,912,228) and further in view of Fisher et al. (U.S. Patent No. 5,321,754). Applicants respectfully traverse this rejection, as hereinafter set forth.

The nonobviousness of independent claim 1 precludes a rejection of claim 4 which depends therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03.

The nonobviousness of independent claim 6 precludes a rejection of claims 9 and 10 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03.

The nonobviousness of independent claim 20 precludes a rejection of claim 23 which depends therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03.

The nonobviousness of independent claim 25 precludes a rejection of claims 28 and 29 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03.

Therefore, Applicants request the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejections to claims 4, 9, 10 and 23, 28, 29.

Obviousness Rejection Based on U.S. Patent No. 5,060,266 to Dent in view of U.S. Patent No. 6,912,228 to Dahlman et al. and further in view of U.S. Patent No. 6,973,189 to Bodin

Claims 5 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dent (U.S. Patent No. 5,060,266) in view of Dahlman et al. (U.S. Patent No. 6,912,228) and further in view of Bodin (U.S. Patent No. 6,973,189). Applicants respectfully traverse this rejection, as hereinafter set forth.

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The nonobviousness of independent claim 1 precludes a rejection of claim 5 which depends therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03.

The nonobviousness of independent claim 20 precludes a rejection of claim 24 which depends therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03.

Therefore, Applicants request the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to claims 5 and 24.

CONCLUSION

Claims 1, 3-6, 8-10, 20, 22-25 and 27-29 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact the undersigned.

Respectfully submitted,

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